

**CLAIMS**

1. A waste paper fiber utilization system, comprising:
  - a disintegration unit for disintegrating waste paper into fibers; and
    - a recycling unit for recycling the fibers to new products,
      - said disintegration unit for disintegrating waste paper into fiber using an amount of water such that
      - 10 capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing the disintegrated fibers.
  2. The waste paper fiber utilization system according to claim 1, wherein
    - said disintegration unit disintegrates the waste paper at a yield of 100 percent using water such that a ratio in weight of waste paper to be disintegrated to water to be used is 1 to 0.6~1.0 when disintegrating
    - 20 the waste paper.
  3. The waste paper fiber utilization system according to claim 1, wherein
    - said recycling unit mixes the fibers with a
    - 25 predetermined additive to produce a substance with a

specific characteristic.

4. The waste paper fiber utilization system according to claim 3, wherein

5       the additive is one of plaster, rubber, paste, fillings, ceramic powder, carbon powder, a copper wire, an iron wire, cement, inorganic powder and zeolite or a combination of two or more of them.

10 5. The waste paper fiber utilization system according to claim 1, wherein

      said recycling unit colors the fibers in a predetermined color.

15 6. A waste paper disintegration device which disintegrates waste paper into fibers, comprising:

      a rotary feather provided with a plurality of feathers extending from its center;

      a storage unit provided inside the rotary feather, 20 for storing the waste paper;

      a pouring unit for pouring an amount of water such that capable of disintegrating waste paper and no waste liquid may be caused even when compressing disintegrated fibers; and

25       a control unit for controlling rotation speed of

the rotary feather, based on a type, combination and weight of waste paper stored in the storage unit.

7. The waste paper disintegration device according to  
5 claim 6, wherein

    said pouring unit for pouring water such that a ratio in weight of waste paper to be disintegrated to water to be used is 1 to 0.6~1.0 when disintegrating the waste paper.

10

8. The waste paper disintegration device according to  
claim 6, wherein

    said control unit for controlling a rotation time and the amount of water, based on a type, combination  
15 and weight of waste paper stored in the storage unit.

9. The waste paper disintegration device according to  
claim 6, wherein

    a projection of a predetermined length is provided  
20 on the inner side of a cover provided for said storage unit.

10. The waste paper disintegration device according to  
claim 6, wherein

25      said storage unit is provided with a bowl-shaped

or conic member on the inner side of its cover.

11. The waste paper disintegration device according to  
claim 6, wherein

5           said storage unit is provided with one or more  
holes on its cover.

12. The waste paper disintegration device according to  
claim 10, wherein

10           a projection of a predetermined length is provided  
on the inner side of said bowl-shaped member or the conic  
member.

15           13. The waste paper disintegration device according to  
claim 6, wherein

              said rotary feather is formed in such a way that  
a space of a predetermined size can be secured between  
the inside of said storage unit and the tip of a feather  
of said rotary feather.

20

14. The waste paper disintegration device according to  
claim 6, wherein

              the plurality of feathers is formed in such a way  
as to be extended outward as they go away from the center  
25           of said rotary feather.

15. The waste paper disintegration device according to  
claim 6, wherein

5        said storage unit comprises two or more said  
rotary feathers.

16. The waste paper disintegration device according to  
claim 6, wherein

10      one or more rotary feathers are provided on the  
inside of a cover provided for said storage unit.

17. The waste paper disintegration device according to  
claim 6, wherein

15      one or more rotary feathers are provided on the  
inner side of said storage unit.

18. The waste paper disintegration device according to  
claim 6, further comprising

20      an observation unit which is provided for said  
storage unit and by which the inside of the storage unit  
can be observed from the outside.

19. The waste paper disintegration device according to  
claim 6, further comprising

25      an illumination unit for illuminating the inside

of said storage unit.

20. The waste paper disintegration device according to  
claim 6, wherein

5           said storage unit is inclined at a predetermined  
angle formed between a shaft connecting its center point  
of the base of the storage unit with its center point  
of the opening part of the storage unit and a shaft  
perpendicular to the ground.

10

21. The waste paper disintegration device according to  
claim 6, wherein

          said storage unit is composed of a plurality of  
storage units, and of said plurality of storage units,  
15 a predetermined storage unit disintegrates waste paper  
into fibers and another storage unit further  
disintegrates the waste paper disintegrated by the  
predetermined storage unit into fibers.

20 22. A waste paper disintegration device which  
disintegrates waste paper into fibers, comprising;

          a storage unit whose side rotates at predetermined  
rotation speed, for storing the waste paper,  
          one or more projection members provided on the  
25 inside of the storage unit;

a pouring unit for pouring an amount of water such that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing the disintegrated fibers, into the storage unit; and

5 a control unit for controlling the rotation speed of the side of the storage unit, based on a type, combination and weight of the waste paper to be stored in the storage unit.

10 23. A waste paper disintegration device which disintegrates waste paper into fibers, comprising;

a storage unit whose cover rotates at a predetermined rotation speed, for storing the waste paper,

15 one or more projection members provided on the inner inside of the cover of the storage unit;

a pouring unit for pouring an amount of water such that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing 20 the disintegrated fibers, into the storage unit; and

a control unit for controlling the rotation speed of the cover of the storage unit, based on a type, combination and weight of the waste paper to be stored in the storage unit.

24. A waste paper fiber utilization system, comprising;  
a terminal device installed for a user, which is  
the renter of a waste paper disintegration device for  
disintegrating waste paper into fibers;

5 a recycling unit for recycling the fibers to a  
product;

a monitor unit for monitoring the disintegration  
work of the waste paper in the waste paper disintegration  
device;

10 a management unit for receiving data indicating  
the monitored contents of the monitor unit from the  
monitor unit via a network and recording data; and  
a transmitting unit for transmitting the  
monitored data recorded in the management unit to the

15 terminal device via the network,

wherein

20 said waste paper disintegration device can  
disintegrate the waste paper into fibers, using an  
amount of water such that no waste liquid may be caused  
even when compressing the disintegrated fibers.

25. The waste paper disintegration device according to  
claim 6, wherein

25 said rotary feather comprises two feathers each  
of which extends in the same linear direction from its

center, and each of the two feathers comprises a collision plate which collides with the waste paper and crashes it on it [c1]when said rotary feather rotates.

5 26. The waste paper disintegration device according to  
claim 25, wherein

10 said collision plate is vertically provided on  
each of the two feathers, is disposed in the direction  
orthogonal to the linear direction and is also extended  
upward against the two feathers.

27. The waste paper disintegration device according to  
claim 25, wherein

15 said rotary feather is provided with a long and  
slender projection member in a position higher than the  
collision plate provided on each of the two feathers.

28. The waste paper disintegration device according to  
claim 6, wherein

20 said rotary feather rotates and also vertically  
shifts against said storage unit.

29. The waste paper disintegration device according to  
claim 6, wherein

25 a cover provided for said storage unit vertically

shifts against said storage unit while said rotary feather is rotating.

30. The waste paper disintegration device according to  
5 claim 6, further comprising;

a heating unit provided on the outer circumference of the storage unit, for generating heat with a predetermined temperature; and

10 an adjustment unit for adjusting the temperature of heat generated by the heating unit.

31. A waste paper disintegration device which disintegrates waste paper into fibers, comprising;

15 a supply unit for supplying the entire waste paper with a predetermined amount of water;

a first storage unit with a rotary feather for disintegrating waste paper containing the predetermined amount of water supplied by the supply unit, into fibers, for storing the waste paper;

20 a control unit for controlling a rotating operation of the rotary feather;

a second storage unit provided beneath or side by side the first storage unit, for storing the waste paper disintegrated by the rotary feather; and

25 a hole with a size such that the waste paper

disintegrated by the rotary feather can pass through it, provided on a wall for separating the first and second storage units from each other.

5 32. The waste paper disintegration device according to  
claim 31, wherein

    said supply unit comprises

    a first cylindrical member which touches on  
    one surface of the waste paper, for feeding the waste  
10 paper to said first storage when rotating in a  
predetermined direction; and

    a second cylindrical member which touches  
    on the other surface of the waste paper, for feeding  
    the waste paper to the first storage unit when rotating  
15 in the direction the reversal of the rotating direction  
    of the first cylindrical member, and

    supplies at least one of the first and second  
    cylindrical members with the predetermined amount of  
    water.

20

33. The waste paper disintegration device according to  
claim 32, wherein

    said supply unit supplies both said first and  
    second cylindrical members with the predetermined  
25 amount of water.

34. The Waste paper disintegration device according to  
claim 31, further comprising

5 an opening/closing unit provided on a wall for  
separating said first and second storage units from each  
other, for opening/closing said hole.

35. The Waste paper disintegration device according to  
claim 31, further comprising

10 a third storage unit for storing a plurality of  
pieces of waste paper before disintegration; and  
a feeding unit for feeding the waste paper from  
the third storage unit to the supply unit at  
predetermined time intervals.

15

36. The Waste paper disintegration device according to  
claim 31, wherein

said supply unit comprises  
a first cylindrical member which touches on  
20 one surface of the waste paper, for feeding the waste  
paper to said first storage when rotating in a  
predetermined direction; and  
a second cylindrical member which touches  
on the other surface of the waste paper, for feeding  
25 the waste paper to the first storage unit when rotating

in the direction the reversal of the rotating direction of the first cylindrical member, and

5 a spraying unit for producing fog from the predetermined amount of water and spray it on the waste paper fed by the first and second cylindrical members.

37. The waste paper disintegration device according to claim 31, wherein

10 said first storage unit is inclined at a predetermined angle.

38. The waste paper disintegration device according to claim 31, wherein

15 said rotary feather is provided on the side of said first storage unit.

39. The waste paper disintegration device according to claim 32, 33 or 36, wherein

20 a plurality of circular blades is provided on the side of said first cylindrical member at equal intervals, and

a plurality of grooves corresponding to the plurality of circular blades is provided on the side of said second cylindrical member.

40. The waste paper disintegration device according to  
claim 32, 33 or 36, wherein

a plurality of convex parts is provided on the side  
of said first cylindrical member at equal intervals,

5 and

a plurality of concave parts corresponding to the  
plurality of convex parts is provided on the side of  
said second cylindrical member.

10 41. The waste paper disintegration device according to  
one of claims 31 through 40, wherein

Said control unit controls a rotating operation  
of said plurality of rotary feather provided on the same  
shaft.

15

42. The waste paper disintegration device according to  
one of claims 31 though 41, wherein

said supply unit further comprises

20 a third cylindrical member which touched on  
one surface of the waste paper, for feeding the waste  
paper to said first storage unit when rotating in a  
predetermined direction; and

a clumping plate for clumping the other  
surface of the waste paper, and

25 a plurality of spike-shaped members is

provided on the side of said third cylindrical member.

43. The waste paper disintegration device according to one of claims 31 through 41, wherein

5           one or more projections is provided on the inner side of said first storage unit.

44. The waste paper disintegration device according to one of claims 31 through 41, wherein

10           a spiral groove is provided on the inner side of said first storage unit.

45. The waste paper disintegration device according to one of claims 31 through 41, wherein

15           a plurality of grooves is vertically or horizontally provided on the inner side of said first storage unit.

46. The waste paper disintegration device according to 20 claim 15, wherein

              said storage unit comprises a pole member with a side along each rotation orbit of two or more said rotary feathers.

25           47. The waste paper disintegration device according to

claim 6, wherein

a cylindrical member is provided on the rotation  
shaft of said rotary feather, and

5 a bar member is provided on the side of said  
cylindrical member.

48. The waste paper disintegration device according to  
claim 6, wherein

10 a cylindrical member is provided on the rotation  
shaft of said rotary feather, and

15 a string member is provided on the side of said  
cylindrical member.

49. The waste paper fiber utilization system according  
15 to claim 1, wherein

20 said recycling unit puts the fibers in a cylinder  
or a half-cylinder formed in a predetermined shape, and  
the fibers are used as culture soil in vertical  
afforestation, hanging afforestation and other  
afforestation.

50. The waste paper fiber utilization system according  
to claim 1, wherein

25 said recycling unit produces flame-resistant  
fibers by mixing the fibers with boron, a flame-proof

material, a flame-resistant material or another material, fills the flame-resistant fibers in a flame-resistant box, bag or another container and produces a heat insulating material.

5

51. The waste paper fiber utilization system according to claim 1, wherein

10       said recycling unit makes the fibers contain water or liquid fertilizer and produces culture soil as a needle-point flower holder for arranging flowers.

52. A waste paper fiber utilization system, comprising:

15       a disintegration unit for disintegrating the waste paper into fibers using an amount of water such that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing disintegrated fibers;

20       a recycling unit for recycling the fibers to a product according to an instruction of a user;

25       a monitor unit for monitoring and recording the waste paper disintegration process by a disintegration unit and the production process of a recycled product produced by the recycling unit; and

25       a transmitting unit for transmitting monitored contents recorded by the monitor unit to a terminal

device provided for a user via a network.